

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)
2. (Cancelled)
3. (Currently Amended) The method of claim 2 7, further comprising uniquely identifying the network element based on the identifier of the network element and an identifier of the paging area where the temporary identity was allocated.
4. (Cancelled)
5. (Cancelled)
6. (Cancelled)
7. (Previously Presented) A method of allocating a temporary identity to at least one mobile station in a cellular network, the method comprising:  
using a network element having an identifier of its own to allocate a temporary identity to the at least one mobile station, wherein the temporary identity includes at least part of an identifier indicating the network element, wherein each of the at least one mobile stations is located within one of a plurality of paging areas of the cellular network, and wherein the temporary identity of the at least one mobile station also includes a paging identity which is unique to each of the at least one mobile stations, and wherein each of the plurality of paging areas includes an associated master network element for allocating a paging identity to each of the at least one mobile stations in the paging area;  
requesting a paging identity for at least one mobile station from the master network element of a paging area; and  
allocating the temporary identity to the at least one mobile station in the paging area associated with the master network element,

wherein each of the plurality of paging areas is coupled to a plurality of network elements;

the method further comprising:

using the temporary identity for routing uplink traffic to the network element currently serving the at least one mobile station;

after the at least one mobile station moves from a first paging area of the plurality of paging areas to a second paging area of the plurality of paging areas, the network element of the second paging area using the temporary identity and the identifier of the second paging area for deriving an identifier of the network element of the first paging area which served the mobile station before the move, and ~~The method of claim 6,~~

wherein only the paging identity is used for paging the mobile station, and the method further comprises using the temporary identity for signaling.

8.-19. (Cancelled)

20. (Currently Amended) A cellular network comprising:  
at least one network element configured to allocate a temporary identity to at least one mobile station, wherein the temporary identity includes at least a part of an identifier indicating a network element that allocates the temporary identity; ~~The cellular network of claim 19, further comprising and~~

a database element configured to:

receive an inquiry including the at least part of the identifier of the network element that allocates the temporary identity and information relating to a location where the temporary identity was allocated, such as a paging area identifier; and

determine, based on the inquiry, an address of the network element which allocated the temporary identity.

21. (Previously Presented) The cellular network of claim 20, wherein the database element is a domain name server.

22. (Previously Presented) The cellular network of claim 20, wherein the database element is further configured to send an inquiry to another network element currently storing a context for the mobile station in question.

23. (Cancelled)

24. (Cancelled)

25. (Currently Amended) A mobile station for a cellular network, wherein the mobile station is configured to use a temporary identity allocated by a network element, the temporary identity including at least a part of an identifier of a network element that allocates the temporary identity, and ~~The mobile station of claim 23,~~ wherein the mobile station is configured to use a part of the identifier of the network element that allocates the temporary identity for data transfer, and to use the identifier for signaling.

26. (Previously Presented) A mobile station for a cellular network, wherein the mobile station is configured to use a temporary identity allocated by a network element, the temporary identity including at least a part of an identifier of a network element that allocates the temporary identity, and ~~The mobile station of claim 23,~~ wherein the temporary identity includes 3 to 5 bits of the identifier of the network element that allocates the temporary identity.

27. (Currently Amended) The network element of claim ~~8~~28, wherein the network element is a support node.

28. (Currently Amended) A network element for a cellular network configured to allocate a temporary identity to at least one mobile station, wherein the temporary identity includes at least a part of an identifier indicating a network element that allocates the temporary identity, and ~~The mobile station of claim 8,~~ wherein the temporary identity includes 3 to 5 bits of the identifier of a network element that allocates the temporary identity.

29. (Currently Amended) The radio station controller of claim ~~31~~17, wherein the radio station controller is a base station controller.

30. (Currently Amended) The radio station controller of claim 31~~17~~, wherein the radio station controller is a radio network controller.

31. (Previously Presented) A radio station controller for a cellular network, configured to route data packets including a temporary identity allocated to a mobile station, wherein the temporary identity includes at least part of an identifier indicating a network element which allocated the temporary identity;

and wherein the radio station controller is configured to use at least part of the temporary identifier to route data packets to the first network element currently serving the mobile station, and~~The radio station controller of claim 17,~~ wherein the temporary identity comprises 3 to 5 bits of the identifier of the network element that allocates the temporary identity.